

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A current injection-type magnetic domain wall-motion device comprising:

a first magnetic body directly adjacent to a third magnetic body and a second magnetic body directly adjacent to the third magnetic body, ~~[[a]]~~ the second magnetic body ~~[[with]]~~ having a magnetization direction antiparallel to that of the first magnetic body, a ~~third magnetic body sandwiched therebetween~~, a first microjunction interface between the first and the third magnetic bodies, and a second microjunction interface between the third and the second magnetic bodies, wherein

the magnetization direction of the third magnetic body is controlled in such a manner that a current is applied to pass through the first and second microjunction interfaces, such that a magnetic domain wall present between the first and second magnetic bodies is moved within the third magnetic body in the same direction as that of the current or in the direction opposite to that of the current by the interaction between the magnetic domain wall and a direct flow of the current.

Claim 2 (Original): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the magnetic bodies are made of a magnetic semiconductor.

Claim 3 (Original): The current injection-type magnetic domain wall-motion device according to Claim 2, wherein the magnetic semiconductor is a (Ga, Mn)As ferromagnetic semiconductor.

Claim 4 (Original): The current injection-type magnetic domain wall-motion device according to Claim 2, wherein the magnetic semiconductor is an (In, Mn)As ferromagnetic semiconductor.

Claim 5 (Original): The current injection-type magnetic domain wall-motion device according to any one of Claims 1 to 4, wherein the current is a pulse current.

Claim 6 (Original): The current injection-type magnetic domain wall-motion device according to Claim 5, wherein the pulse current has a current density of  $10^4$ - $10^7$  A/cm<sup>2</sup>.

Claim 7 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the first and second magnetic bodies are prepared by film formation in a magnetic field.

Claim 8 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the magnetization directions of the first and second magnetic bodies are aligned antiparallel to each other with an external magnetic field using a difference in coercive force therebetween after a film formation.

Claim 9 (Original): The current injection-type magnetic domain wall-motion device according to Claim 8, wherein the first and second magnetic bodies are made of different materials.

Claim 10 (Original): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the first and second magnetic bodies are made of the same

material and the second magnetic body is magnetically coupled with an antiferromagnetic film disposed on the second magnetic body such that the first and second magnetic bodies have different coercive forces.

Claim 11 (Original): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the first and second magnetic bodies are made of the same material, and have different film thicknesses, such that the first and second magnetic bodies have different coercive forces.

Claim 12 (Original): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the first and second magnetic bodies are made of the same material, and have different shapes, such that the first and second magnetic bodies have different coercive forces due to difference of shape anisotropy.

Claim 13 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 2, 3, or 4, wherein different external electric fields are applied to the first and second magnetic bodies made of the magnetic semiconductor, such that the first and second magnetic bodies have different coercive forces.

Claim 14 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the third magnetic body has a reduced cross-sectional area such that the magnetic domain wall is encouraged to be positioned at the first or second microjunction interface, whereby the energy loss due to the creation of the magnetic domain wall in the third magnetic body is less than both that in the first magnetic body and that in the second magnetic body.

Claim 15 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the third magnetic body is made of a material with a magnetization smaller than that of a material for forming the first and second magnetic bodies such that the magnetic domain wall is encouraged to be positioned at the first or second microjunction interface, whereby the energy loss due to the creation of the magnetic domain wall in the third magnetic body is less than both that in the first magnetic body and that in the second magnetic body.

Claim 16 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the first to third magnetic bodies are made of the same material and the magnetization of the third magnetic body is rendered smaller than both that of the first magnetic body and that of the second magnetic body by applying an external electric field to the third magnetic body such that the magnetic domain wall is encouraged to be positioned at the first or second microjunction interface, whereby the energy loss due to the creation of the magnetic domain wall in the third magnetic body is less than both that in the first magnetic body and that in the second magnetic body.

Claim 17 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the first and second microjunction interfaces have constrictions such that the magnetic domain wall is encouraged to be positioned at the first or second microjunction interface, whereby the magnetic domain wall is encouraged to be trapped at one of the constrictions.

Claim 18 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 1, wherein the magnetization direction of the third magnetic body can be read out.

Claim 19 (Previously Presented): The current injection-type magnetic domain wall-motion device according to Claim 18, wherein the magnetization state of the third magnetic body is read out in such a manner that the resistance of the third magnetic body is measured by applying a small current that is insufficient to move the magnetic domain wall, to a current injection terminal using a feature that the device has different resistances depending whether the magnetic domain wall is located at the first or second microjunction interface.

Claim 20 (Previously Presented): The current injection-type magnetic domain wall-moving device according to Claim 19, wherein the first and second microjunction interfaces are formed to have asymmetric structure such that a difference in resistance is readily created in the third magnetic body.

Claim 21 (New): The current injection-type magnetic domain wall-moving device according to Claim 1, wherein the first and second magnetic bodies have fixed magnetization directions.